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## USE OF MOLASSES IN FEED AND ALCOHOL

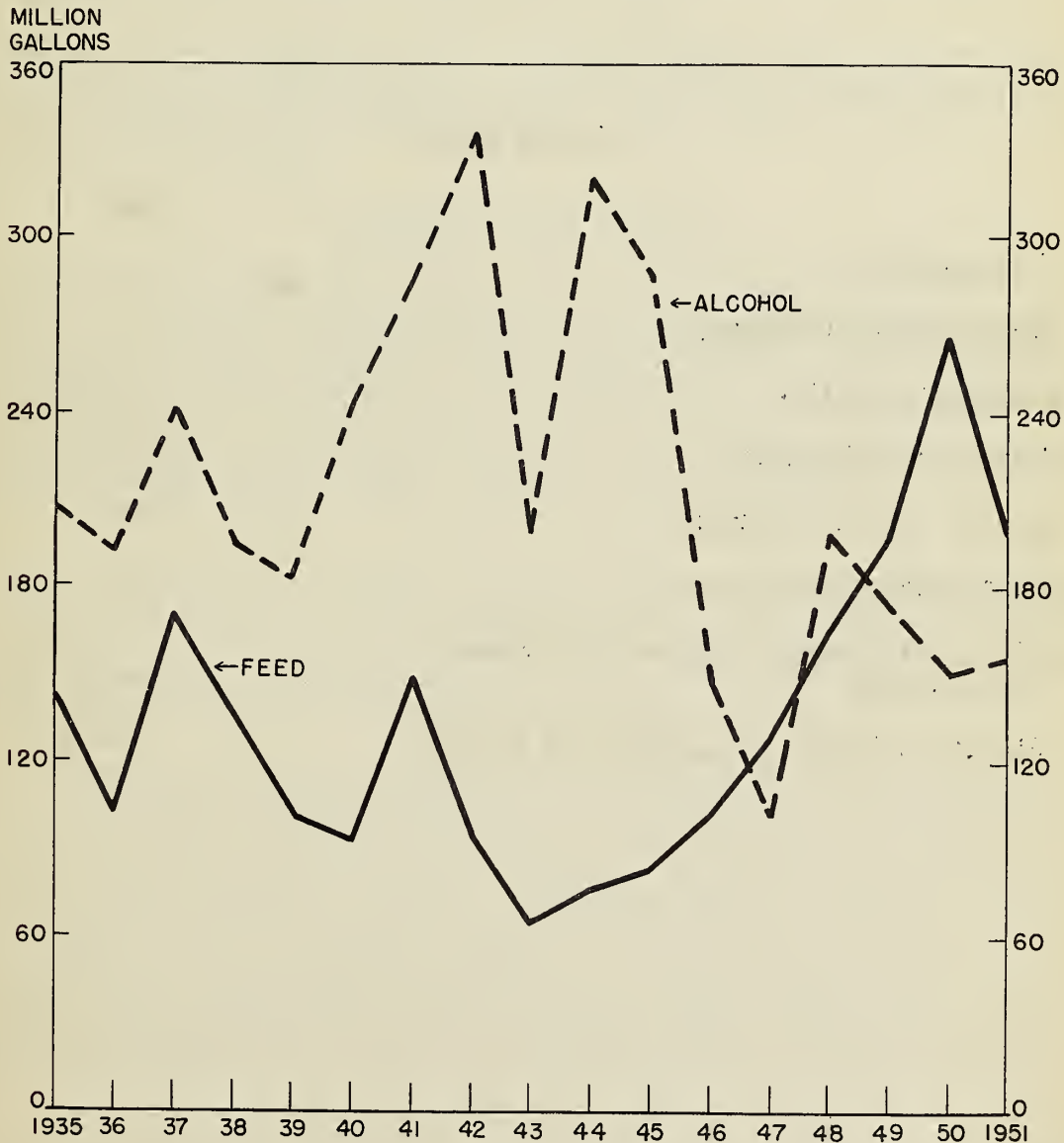


FIGURE 1. UTILIZATION OF INDUSTRIAL MOLASSES IN LIVESTOCK FEED AND IN INDUSTRIAL ALCOHOL PLANTS, FISCAL YEARS, ENDING JUNE 30, 1935-1951.

The most significant changes in industrial molasses utilization has been the decline in use in industrial alcohol and the rapid increase in the utilization of molasses as a feed material. Molasses consumption in industrial alcohol plants has been about 50 million gallons below the 1935-39 average since 1945. On the other hand, molasses use by the feed trade has increased by some 100 million gallons over the same period.

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## INDUSTRIAL MOLASSES SUPPLIES AND REQUIREMENTS

Introduction

This report brings industrial molasses statistics published in October 1950 in "Sugar Reports" 9-M as nearly up to date as possible and also contains detailed information on inedible molasses production, imports, and utilization for the past 18 months. Since new data have been collected during the past 10 months, several tables presented in the previous report are revised.

There follows a general summary of conditions existing in the molasses feed market and in the industrial alcohol industry since early 1950. In addition, more detailed discussion of molasses and alcohol supplies, demand, prices, and the general outlook in these markets is included.

General Market Summary

During the first 3 or 4 months of 1950, molasses prices were very low, 7 to 8 cents per gallon f.o.b. tankcar at port terminals, and molasses was a very cheap feed-stuff relative to grain. Feed mixers were using very large quantities and making heavy contracts for future delivery. This heavy demand for feed, increases in alcohol prices, plus a relatively short Cuban crop, 262 million gallons or 25 to 30 million gallons below normal expectations, had a strengthening effect on the market prior to the outbreak of the Korean conflict. Prices increased first in April and by late June 1950, were 10.5 to 11.5 cents at port terminals.

Ethyl alcohol prices were at a very low level early in 1950; 29 cents per gallon f.o.b. tankcar New York. An alcohol price war had forced alcohol to a low of 21 cents in mid-1949. Because of prospective raw material shortages, very low ethyl alcohol stocks, and an increase in alcohol demand; prices of alcohol started up in March 1950 and reached about 37 cents in late June of that year.

When the war in Korea started, demand for alcohol soared at a time when stocks were very low. The chemical industry quickly tied up virtually all the domestic output, leaving sections of the chemical industry and other users in a position of bidding for very small supplies. In addition, a major problem arose with the activation of the defense synthetic alcohol program. To a great extent, both the alcohol producing and consuming trades based pricing and buying practices on the fear that the synthetic rubber program would take some 5 to 10 million gallons off the domestic market each month. Consequently, the price of alcohol soared from 37 cents in June to 75 cents in September and 90 cents in November 1950. The 90 cent price still prevailed when the Office of Price Stabilization issued its freeze order in January of 1951.

The fears of the chemical industry, stemming from the possibility of government requirements for the synthetic rubber program taking a large share of domestic production, were assuaged when the Office of Rubber Reserve, Reconstruction Finance Corporation, announced in late 1950 that it had contracted for shipment of slightly over 120 million wine gallons of alcohol from France and other foreign sources. Also, as will be discussed later, grain supplied a much larger than usual quantity of alcohol raw material.



The great demand for alcohol, the bidding of alcohol fermentation producers for this raw material, and the desire of the feed trade and other users to secure their share of a relatively limited supply provided a heavy pull on prices of blackstrap molasses and other inedible types of molasses. From a level of about 11 cents f.o. b. tankcar New York in late June 1950, blackstrap prices advanced rapidly to as high as 37.5 cents during December 1950 and January 1951. This became the control level established December 19, 1950 to January 25, 1951 in all the northeastern United States terminals and market quotations have remained at these levels to this date. Prices at New Orleans and other Gulf ports were frozen at 34.5 to 35.5 cents, depending on terminal location, but market prices declined to 30 cents by early September, 1951. West Coast prices were frozen at about 27 cents per gallon and have remained at this level.

#### Molasses Supplies 1/

The 1951 molasses supply was slightly over 15 percent smaller than that of 1950, 412 million as compared to 476 million. The major cause of the smaller supply was the decline in Cuban exports. United States consumers have been able to purchase only 130 million gallons of the 1951 Cuban crop as compared to approximately 170 million from the 1950 crop. Since Britain purchased a large quantity of 1949 crop carry-over molasses early in calendar 1950, she obtained only 14 million gallons of 1950 crop molasses but was allocated 50 million gallons of 1951 crop molasses plus 6 million to cover previous unfilled contracts. Puerto Rican shipments were also considerably less, almost 9 million gallons, in 1951 than in 1950. Shipments from Puerto Rico were very small during the latter half of calendar 1950. Also, buyers who owned supplies in both Puerto Rico and Cuba had an incentive to move Cuban supplies first. The 1951 crop Cuban sales contract set up a penalty payment of 1/5 of a cent per gallon each month or fraction thereof for all molasses left in Cuba after August 31, 1951.

Another interesting change in the supply situation has been the increase in the importation of beet molasses. Approximately 27 million gallons of beet molasses were imported in 1951 as compared to 9 million in 1950. This has been due both to the shortage of domestic supplies and to high molasses prices, and to assistance given European countries by U. S. buyers in construction of terminal facilities. It is expected that current prices will continue to be attractive to European and other foreign sellers of molasses during the coming year and supplies will continue to be made available from areas not usually counted on as suppliers.

Supplies in 1952 are expected to be about 6 percent larger than those of 1951. It is estimated that supplies from Cuba will be somewhat larger, primarily because of our being able to obtain a larger quantity from the 1952 crop plus the current unsold portion of the 1951 crop. This assumes, of course, that the current unsold stocks of 35 to 40 million gallons in Cuba will not be used in the local fuel industry or otherwise consumed locally but will be sold either to the United States or Great Britain.

1/ Unless specifically indicated as calendar or crop years, supply data are presented on a fiscal year basis of 12 months ending June 30, in order to compare with published use data.



It is also estimated that shipments from Puerto Rico will increase slightly since a substantial quantity of 1951 crop molasses will be shipped during the last 6 months of this year. Mainland cane molasses and beet molasses production will be considerably lower because of expected short crops.

The supplies of blackstrap and other molasses for fiscal years 1950, 1951 and estimates for 1952, by source, are as follows:

Blackstrap and other molasses from:	Year Ending June 30		
	1952	1951	1950
	(million gallons)		
Cuba	160	116	196
Puerto Rico	40	36	45
Hawaii	40	40	43
Mexico	25	26	21
Dominican Republic	10	11	17
Europe (beet) and miscel.	30	42	17
Total offshore	305	271	339
Mainland cane mills	34	40	38
Cane sugar refiners	33	35	33
Hydrol	18	18	16
Citrus	10	9	7
Beet	35	43	43
Total mainland	130	145	137
Total--all sources	435	416	476

#### Molasses Utilization 2/

Although the feed trade consumed almost half of the 416 million gallons of molasses available in year ended June 30, 1951, purchases by this industry were 25 percent under 1950. It is estimated that 268 million gallons were used in feedstuffs in 1950 and 200 million in 1951. Most of the decline in consumption occurred during the first 6 months of calendar 1951. By this time feed mixers has used all the low-cost supplies contracted for in advance of the sharp price increases in the fall of 1950 and early 1951. Also, molasses supplies available for sale by distributors were very short during late calendar 1950 and the first 3 months of 1951. Perhaps the more important deterrent was the fact that on a feed value basis molasses prices in many interior areas were considerably above those of corn and other grain feeds.

Because of its high price as a carbohydrate feed, several types of molasses utilization have been curtailed. Direct farm feeding in interior areas has virtually disappeared. Production of high-molasses content feeds for beef cattle has been

2/ Data is on a fiscal year basis of 12 months ending June 30, unless otherwise noted.



very limited because of the extremely high price of the finished product in heavy feeding areas. In mid-western areas, most feed mixers have cut the molasses content of their mixed dairy and livestock feeds considerably. Mixers now compute formulas on 4 to 6 percent molasses as compared to 10 to 12 percent a year ago. Molasses at the current high price relative to grain is used primarily because of its utility in adding palatability to feed, in giving sales appeal to mixes, and for settling dust rather than as an economical source of carbohydrate feedstuff.

The greatest decline in utilization of molasses has been in the mid-west where grain can be obtained at the lowest price. Feed molasses demand has been considerably stronger in the northeastern United States and in the western area of the country because lower transportation charges on molasses and higher transportation charges on grain make molasses use more attractive in the coastal areas.

One of the major reasons for the recent decline in port-terminal molasses prices in the Gulf area is the lack of demand on the part of mid-western feed mixers and feeders, the principal feed market for Gulf molasses.

An important reason for molasses consumption being as high as is estimated in 1951 when prices advanced very rapidly has been the increase in mixed feed tonnage. The American Feed Manufacturers Association estimates that total tonnage mixed from January through June of 1951 exceeded the same period in 1950 by about 9 percent. This tended to hold up molasses utilization despite the limitation of molasses in feed mixes.

Feed molasses consumption in 1952 is expected to amount to 170 million gallons, including hydrol and citrus molasses. This rate of consumption is higher than utilization in feed mixing plants and on farms during the first 6 months of 1951 but the current market price in New Orleans and other Gulf points is now more in line with grain feed costs in the mid-west. Demand for molasses probably will increase in this important consuming area and it appears that there will be sufficient supplies of molasses for the feed trades at prices likely to prevail over the next year. However, supplies may become limited in the northeastern United States and from individual sellers in other areas in January through March 1952 before new crop supplies begin arriving.

Molasses utilization for ethyl alcohol in industrial alcohol plants was about the same in 1951 as in 1950, 128.5 million gallons in 1951 and 129.1 in 1950. The reasons for the low consumption of molasses for ethyl alcohol in a period of extremely high demand for alcohol were a limited supply of blackstrap, the high price of molasses in certain foreign areas, and the availability of large quantities of low priced grain sorghums for alcohol production. More ethyl alcohol was produced from grain in 1951 than in any other years except 1944 and 1945.

It is estimated that approximately 60 million gallons of molasses will be utilized in yeast, citric acid, and edible purposes in 1952 and by assuming a feed demand for molasses of 170 million gallons, approximately 177 million gallons of molasses would be available for ethyl alcohol production in 1952. Also, 26 million gallons of molasses would be available for butanol and acetone and 2 million for spirits and rum. Such utilization would be consistent with a supply estimate of 435 million gallons.



The following statistical data on the utilization of molasses in the fiscal years 1950 and 1951 were developed by using published statistics covering molasses utilization in alcohol plants and by estimating all other uses including feed. The procedure for the fiscal year 1952 was to estimate uses other than alcohol and show a residual quantity available for use in alcohol plants. Changes in stock positions are not estimated. These estimates appear below:

Molasses used for:	Year Ending June 30		
	1952	1951	1950
	(million gallons)		
Ethyl alcohol	177	129	129
Butanol and acetone	26	25	20
Spirits and rum	2	2	2
Feed	170	200	267
Yeast, vinegar, and citric acid	53	53	51
Edible and miscellaneous	7	7	7
Total utilization	<u>435</u>	<u>416</u>	<u>476</u>

#### Alcohol Supply Situation

Several factors combined to make the alcohol supply picture of the 12 months ending June 30, 1951 significantly different from other postwar years. These differences reflect the rapid increase in demand for alcohol in the defense effort. Approximately 58 million wine gallons of ethyl alcohol were produced from 927.3 million pounds of grain sorghum, 273.1 million pounds of corn, and 110.4 pounds of other grain products. Only slightly over 1 million wine gallons of ethyl alcohol were produced from grain in 1950 and 6 million in 1949. Ethyl alcohol produced from ethyl sulphate and ethylene gas have shown steady increases over the past 3 years, 95 million wine gallons in 1949, 104 million in 1950, and an estimated 115 million in 1951. Production of ethyl alcohol from molasses was about 55 million as compared to 57 in 1950 and 67 in 1949. Total ethyl alcohol production in industrial alcohol plants was very high in the year just ended. In fact only 2 years during World War II exceeded the 234 million wine gallons produced in 1951. Ethyl alcohol imports were very high in 1951 and contributed greatly to the total increase in stocks. About 105 million wine gallons were imported from July 1950 through June 1951. Ethyl alcohol stocks on June 30, 1951 of 62 million gallons were the highest since June 30, 1945 and increased by almost 50 million over the same date in 1950. The following data give the source of ethyl alcohol production and imports during the fiscal years 1949, 1950 and estimated 1951, and stocks on June 30 of each year:

Source:	Year Ending June 30		
	1951	1950	1949
	(million wine gallons)		
Molasses	55	57	67
Ethyl sulphate and ethylene gas	115	104	95
Grain	58	1	6
Miscellaneous	6	3	17
Total production	<u>234</u>	<u>165</u>	<u>185</u>
Imports	<u>105</u>	<u>-</u>	<u>1</u>
Total supply	339	165	186
Total Stocks June 30	62	12	27

Slightly larger quantities of molasses should be available for use in industrial alcohol plants during the present fiscal year than were during the past one. With the expected expansion in synthetic ethanol production facilities, at least an additional 10 million gallons should be made available. Much of the grain that may be desired can be purchased during the fall and early winter when damaged and high moisture content grain sorghum and corn may be available at discount prices. Procurement difficulties should not be serious for a quantity equal to the 25 million bushels of grain utilized in the year ending June 30, 1951. However, grain sorghum production in Texas is about 40 percent below last year. Alcohol distillers will not be able to use water transportation and will probably be forced to buy other grains at higher prices and pay additional costs for rail transportation. This change in location of grain supplies and the necessity of a shift from sorghum to higher priced corn will probably cause increased pressure on the purchase of offshore molasses supplies from alcohol distillers.

Of great significance is the matter of availability of foreign supplies of alcohol. Trade reports indicate that 60 to 65 million gallons of foreign produced alcohol should be available for use in the U. S. in 1952. These estimates assure the procurement of 45 to 50 million gallons from France and 15 million from India, Mexico, Cuba, and other suppliers. As in the case of molasses prices, current domestic alcohol prices are attractive to foreign suppliers seeking to expand their exports.

#### Ethyl Alcohol Utilization

Ethyl alcohol utilization estimates for the year ending June 30, 1951 have been obtained from trade sources or have been estimated by Sugar Branch, P.M.A.

The major change in ethyl alcohol utilization during the past year has been the huge increase in use for the manufacture of synthetic rubber. It is also estimated that utilization for all other purposes increased slightly over 1950. Another important factor is the increase in ethyl alcohol stocks of about 50 million from June 30, 1950 to June 30, 1951.

The utilization of ethyl alcohol in fiscal years 1949, 1950 and estimates for 1951 are as follows:

<u>Utilization:</u>	<u>Year Ending June 30</u>		
	1951	1950	1949
Solvent	50	51	46
Aldehydes	95	87	68
Synthetic Rubber	78	4	1
Other Chemical Products	40	37	33
Tax Paid	20	21	21
Completely denatured alcohol, molasses, miscl.	6	7	12
Total utilization	289	207	181
Change in ethyl alcohol stocks	+ 50	- 15	+ 7



The most important market factor in the alcohol market and the molasses market during the next year will be the demand for alcohol in the synthetic rubber program and whether these requirements can be imported or must be produced domestically. Even though the exact requirements are not known, it appears that supplies are already in sight for a rather high rate of utilization. At least 40 million gallons of alcohol are reported to have been purchased during the current fiscal year, about 30 from domestic distillers and approximately 10 from India and other supply areas. Current trade information is that 45 to 50 million wine gallons will be available from France. It is estimated that 5 to 10 million gallons will be available from other foreign areas in addition to that already obtained since mid-1951. If 35 million gallons of ethyl alcohol were used from current domestic stocks, the supplies in view total 125 to 135 million gallons of alcohol for use in the synthetic rubber program. Domestic distillers should therefore be able to give primary attention to supplying the mainland chemical industry other than the Government synthetic rubber program.

Another factor to be considered in the overall ethyl alcohol demand picture is the shift in rubber production in the case of an easing off of rubber demand. Since the conversion of ethyl alcohol to butadiene and finally to the production of synthetic rubber is much more expensive than the production of rubber directly from petroleum raw materials, the former method of production would be curtailed first. This would release ethyl alcohol for other uses and would further relieve the pressure on supplies of raw materials for fermentation alcohol.



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**Table 1**  
ESTIMATED UTILIZATION OF INDUSTRIAL MOLASSES IN THE U. S. MAINLAND,  
FISCAL YEAR 1935-39 AVERAGE AND 1943-51 BY YEARS. (MILLION GALLONS)

	Year Ended June 30									
	1935-39	1943	1944	1945	1946	1947	1948	1949	1950	1951
Industrial Molasses Utilization In:										
Industrial Alcohol Plants for:										
Ethyl alcohol	177.1	171.4	249.6	224.7	103.4	70.3	175.9	156.7	129.1	128.5
Products other than ethyl alcohol (butyle alcohol and acetone primarily)	20.7	12.5	54.5	43.0	30.3	27.2	19.8	13.7	20.4	25.0
Total for industrial alcohol	197.8	183.9	304.1	267.7	133.7	98.2	195.7	170.4	149.5	153.5
In distilleries (spirits and rum)	5.4	8.7	11.1	10.6	8.3	3.1	2.6	2.6	2.2	2.7
Total in alcohol plants and distilleries <sup>1/</sup>	203.2	192.6	315.2	278.3	142.0	101.3	198.3	173.0	151.7	156.2
Livestock Feed, Direct Feeding, and Silage <sup>2/</sup>	130.9	64.4	76.7	83.8	102.1	128.5	164.5	197.4	266.8	200.5
Other Uses										
Yeast, citric acid, and vinegar	38.0	38.5	41.2	47.3	46.6	51.0	51.0	51.0	51.0	53.0
Edible sirup and molasses and miscellaneous	6.0	15.7	9.0	10.3	21.8	11.4	8.3	7.5	7.0	7.0
Total other uses <sup>3/</sup>	44.0	54.2	50.2	57.6	68.4	62.4	59.3	58.5	58.0	60.0
Total Utilization	378.1	311.2	442.1	419.7	312.5	292.2	422.1	428.9	476.5	416.7

<sup>1/</sup> Data are from the Alcohol Tax Unit, Bureau of Internal Revenue 1935-39 and 1947-51 and U. S. Tariff Commission 1943-46.

<sup>2/</sup> Data from 1935-39 and 1947-51 are estimated by subtracting molasses used in alcohol plants and distilleries and an estimate of "other uses" from total mainland molasses supplies and using the residual as molasses utilized in feeds. No changes in stocks were considered. Information from 1943-46 from data issued by U. S. Tariff Commission.

<sup>3/</sup> Data from 1935-39 and 1947-51 estimated by Sugar Branch and 1943-46 from U. S. Tariff Commission.

Table 2 INDUSTRIAL MOLASSES, MAINLAND PRODUCTION, INSHIPMENTS AND EXPORTS INTO THE UNITED STATES  
MAINLAND, FISCAL YEARS 1935-51. (1000 Gallons)

Year Ended June 30	Mainland Cane 1/	Domestic Beet 2/	Refiners' Blackstrap 3/	Citrus 4/	Hydrol 5/	TOTAL MAINLAND PRODUCTION
1935	15,686	24,900	29,814	-	9,700	80,100
1936	23,380	25,400	28,863	-	8,300	85,943
1937	31,061	24,700	29,245	-	9,200	94,206
1938	33,531	26,400	25,619	-	8,000	93,550
1939	40,506	27,200	29,299	-	9,000	106,005
1940	31,716	24,800	27,972	-	10,000	94,488
1941	21,476	26,520	32,386	-	11,800	92,182
1942	26,052	21,763	28,398	-	15,400	91,613
1943	26,601	26,058	22,704	-	15,500	90,863
1944	33,184	23,415	32,744	2,554	14,200	106,097
1945	34,116	35,562	35,329	3,394	15,600	124,001
1946	32,165	40,861	25,389	7,783	11,700	117,898
1947	26,404	45,056	27,504	10,226	16,700	125,890
1948	27,076	35,886	33,677	11,609	14,000	122,248
1949	40,464	31,539	33,581	7,311	15,200	128,096
1950	37,722	42,610	33,433	7,235	16,400	137,450
1951	40,176	43,000	35,024	9,000	18,200	145,400

1/ 1935-47 from "World Sugar Situation", Bureau of Agricultural Economics, USDA, Sept. 1949, 1948-50 from unpublished data of Sugar Branch, FMA.

2/ 1935-40 estimated. 1940-50 are reports submitted by beet sugar companies to the Sugar Branch, 1950-51 is estimated.

3/ 1935-47 estimated by multiplying the refiners' production of sugar (short tons, raw value) by 6.25; 1948-51 from reports submitted to the Sugar Branch, FMA.

4/ Obtained from records of the Florida Citrus Processors Association, 1950-51 production estimated.

5/ Estimated by multiplying total dextrose sales by a constant, assuming 2.09 gallons of hydrol per 100 pounds of dextrose.

(Continued)



INDUSTRIAL MOLASSES, MAINLAND PRODUCTION, INSHIPMENTS AND IMPORTS INTO THE UNITED STATES  
MAINLAND, FISCAL YEARS 1935-51. (1000 Gallons)

Table 2  
(continued)

Year Ended June 30	Cuba 6/	Dominican Republic 6/	Dutch Indies 6/	Mexico 6/	Hawaii 7/	Puerto Rico 6/	Other 6/	Total Imports & Inshipments	TOTAL MARKET SUPPLIES
1935	-	-	-	-	-	-	-	312,500	392,600
1936	-	-	-	-	-	-	-	251,500	337,443
1937	246,757	22,712	11,265	-	21,246	25,994	31,236	359,210	453,416
1938	162,636	16,890	18,889	-	35,251	28,892	18,842	281,400	374,950
1939	133,864	22,105	5,845	-	24,993	20,716	17,037	225,900	331,905
1940	210,573	19,998	-	1,340	28,389	20,562	5,477	288,997	383,485
1941	279,839	37,043	-	3,998	41,494	17,478	7,453	390,330	432,512
1942	296,495	17,091	-	6,973	38,625	23,433	5,293	388,522	480,135
1943	135,133	1,463	-	7,585	44,405	3,255	2,779	191,632	282,495
1944	250,614	25,692	-	4,597	43,850	19,049	7,944	348,975	455,072
1945	170,189	28,968	-	1,826	37,261	13,384	5,961	255,763	379,764
1946	67,043	13,315	-	5,500	38,041	19,696	6,099	149,694	267,892
1947	65,339	23,033	-	16,048	30,492	23,786	7,607	166,305	292,195
1948	158,460	19,118	-	29,672	43,796	41,133	7,679	299,858	422,106
1949	160,202	17,287	-	28,616	41,327	41,133	12,234	300,799	428,895
1950	196,389	16,964	-	20,613	43,299	44,656	17,119	339,040	476,490
1951	116,234	10,450	-	26,057	40,243	35,809	42,463	271,256	416,656

6/ Summarized from Bureau of Customs data and reports from the Department of Commerce.

7/ 1935-47 from published data Department of Commerce. 1948-50 data furnished by Hawaiian Sugar Producers association.

8/ Includes shipments from Canada, Poland, Peru, Java, Netherlands, Haiti, British West Indies, Italy, Denmark, Germany, France, British Guiana, Nicaragua and Trinidad.

Table 3 PRODUCTION OF INDUSTRIAL MOLASSES, IMPORTS AND INSHIPMENTS TO THE UNITED STATES MAINLAND, THE PORTION OF THE PRODUCTION NOT SHIPPED TO THE UNITED STATES MAINLAND, BY PRINCIPAL OFFSHORE AREAS SUPPLYING THE UNITED STATES MAINLAND.  
CALENDAR YEARS 1935--1950 (1000 GALLONS)

Year	CUBA			PUERTO RICO		
	Production <sup>2/4/</sup>	Imports into the U.S. <sup>2/4/</sup>	Production Minus Imports into the U.S. <sup>2/4/</sup>	Production <sup>2/6/</sup>	Inshipments to the U.S. <sup>2/6/</sup>	Production Minus Inshipments into U.S. <sup>2/6/</sup>
1935	182,080	176,525	5,555	66,600	52,728	13,872
1936	243,519	184,282	59,237	41,400	25,749	15,651
1937	357,610	237,272	120,338	41,200	27,962	13,238
1938	234,166	131,240	102,926	46,600	19,304	27,296
1939	250,753	160,386	90,367	34,500	21,034	13,466
1940	302,992	238,896	64,096	44,200	26,263	17,937
1941	439,953	348,964	90,989	40,300	18,492	21,808
1942	332,230	194,031	138,199	51,400	12,098	39,302
1943	339,543	145,220	5,677	40,200	10,025	30,175
1944	453,914	249,583	204,331	28,200	17,632	10,568
1945	194,741	113,614	81,127	40,400	16,268	24,132
1946	233,650	57,968	175,682	38,400	17,287	21,113
1947	299,400	105,387	194,013	50,800	31,956	18,844
1948	332,000	139,258	192,742	54,800	44,810	9,990
1949	291,599	161,872	129,727	59,275	43,589	15,686
1950	262,365	186,784	75,581	49,522	31,224	18,298

1/ The import and inshipment data relate to calendar years.

2/ Crop-year basis, the processing season extending from January through June.

3/ Processing in Hawaii takes place in each month of the year and is reported on a calendar year basis.

4/ Data are from "World Sugar Situation" BAE, September 1949 and from reports by the Cuban Sugar Stabilization Institute.

5/ Summarized from Customs' sheets and reports from the Department of Commerce.

6/ Data are from "Annual Report of the President, Association of Sugar Producers of Puerto Rico".

(Continued)

Table 3 (Cont'd) PRODUCTION OF INDUSTRIAL MOLASSES, IMPORTS AND INSHIPMENTS TO THE UNITED STATES MAINLAND, THE PORTION OF THE PRODUCTION NOT SHIPPED TO THE UNITED STATES MAINLAND, BY PRINCIPAL OFFSHORE AREAS SUPPLYING THE UNITED STATES MAINLAND.  
CALENDAR YEARS 1935--1950 (1000 GALLONS)

Year	Production <sup>3/7/</sup>	HAWAII		TOTAL ALL AREAS		Production Minus Imports and Inshipments to the U. S. Mainland
		Inshipments to the U.S. Mainland <sup>6/</sup>	Production Minus Inshipments into U. S. Mainland	Production	Imports and Inshipments to the U.S. Mainland	
1935	42,665	28,570	14,095	291,345	257,823	33,522
1936	46,469	21,232	25,237	331,388	231,263	100,125
1937	45,327	31,015	14,312	444,137	296,249	147,888
1938	48,291	28,141	20,150	329,057	178,685	150,372
1939	44,743	28,979	15,764	329,996	210,399	119,597
1940	45,342	31,842	13,500	392,534	297,001	95,533
1941	49,344	45,441	3,903	529,597	412,897	116,700
1942	47,004	36,839	10,165	430,634	242,968	187,666
1943	50,390	49,805	585	230,133	205,050	25,083
1944	46,659	38,531	8,128	528,773	305,746	223,027
1945	44,769	36,942	7,827	279,910	166,824	113,086
1946	36,121	32,226	3,895	308,171	107,481	200,690
1947	48,768	37,461	11,307	398,968	174,804	224,164
1948	43,515	44,483	968	430,315	228,551	201,764
1949	45,770	42,523	3,247	396,644	247,984	148,660
1950	41,381	41,076	305	353,268	259,084	94,184

<sup>7/</sup> 1935-48 supplied by the California and Hawaiian Sugar Corporation, Ltd.; 1949 and 1950 by the Hawaiian Sugar Planters Association.

<sup>8/</sup> Data supplied by the Hawaiian Sugar Planters Association.



Table 4

RELATIONSHIPS BETWEEN THE NEW YORK CORN-  
MOLASSES PRICE AND THE ESTIMATED VOLUME OF UTILIZATION  
OF INDUSTRIAL MOLASSES IN FEED, FISCAL YEARS 1935-51.

Year ended June 30	Price of 1 bushel of corn minus the price of $6\frac{1}{2}$ gals. of molasses $\frac{1}{2}$ / (cents)	Estimated Molasses utilization in livestock feeding (million gallons)
1935	÷ 49.8	142.4
1936	÷ 33.5	102.7
1937	÷ 76.0	171.2
1938	÷ 40.1	136.9
1939	÷ 26.7	101.8
1940	÷ 33.1	93.0
1941	÷ 33.9	149.6
1942	÷ 2.4	94.4
1943	- 6.7	64.4
1944	÷ 6.2	76.7
1945	÷ 11.4	83.8
1946	÷ 14.9	102.1
1947	÷ 62.2	128.5
1948	÷ 55.5	164.5
1949	÷ 70.6	197.4
1950	÷ 103.9	266.8
1951	- 2.9	200.5
July 1951	- 37.3	-

Source: 1935-49 from Kutish, L. John, Marketing of Feed Molasses, Sugar Branch, PMA, USDA., February 1950, Table 6, page 10. Hydrol and citrus molasses is added for the above period. 1950 corn prices are from Division of Historical and Statistical Research, BAE.

1/  $6\frac{1}{2}$  gallons of molasses is the carbohydrate equivalent of 1 bushel of corn.

2/ Corn prices controlled March 1943-Nov. 1946; molasses Jan. 1942-March 1947.

Table 5

POLASSES, SLACESTRAP: PRICE PER GALLON 1/2, P. O. B. TANK CAR NEW YORK, MONTHLY  
JANUARY 1935-AUGUST 1951 (CENTS)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1935	7.62	7.62	8.12	8.20	8.25	8.25	8.25	8.25	8.25	6.25	8.25	8.25
1936	8.25	8.25	8.25	8.25	8.25	8.25	8.25	7.55	7.25	7.25	7.25	7.25
1937	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.19	7.00	7.00	7.00
1938	7.00	7.00	7.00	7.00	6.70	6.50	6.50	6.50	6.50	6.50	6.50	6.50
1939	6.50	6.50	4.50	4.50	4.50	4.50	4.50	4.50	5.25	5.75	5.75	5.75
1940	5.75	5.75	5.75	5.75	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
1941	7.00	7.00	7.25	7.88	8.20	8.50	9.25	9.50	10.25	12.80	13.44	15.19
1942	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1943	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1944	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1945	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1946	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50
1947	18.50	18.50	18.50	20.50	23.70	22.38	21.75	22.30	23.25	25.70	30.38	34.12
1948	37.00	37.00	37.00	37.00	37.00	34.44	26.60	25.50	24.00	21.20	20.50	20.50
1949	15.25	9.75	9.00	8.70	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.10
1950	8.00	8.00	8.00	8.00	8.40	10.90	14.00	17.55	20.75	26.25	30.85	32.50
1951	36.50	36.50	36.50	36.50	36.50	36.50	36.50	36.50				

1/ Prices were controlled from January 1942-arch 1947

Source: Jan. 1935 - December 1950 compiled by Bureau of Agricultural Economics from Oil, Paint and Drug Reporter; January-July 1951 from Sugar Branch, P. O. A., weekly molasses market Report.

Table 6

INDUSTRIAL MOLASSES USED IN THE PRODUCTION OF ETHYL ALCOHOL AND  
OTHER PRODUCTS OF INDUSTRIAL ALCOHOL PLANTS AND IN DISTILLED SPIRITS IN  
DISTILLERIES, FISCAL YEARS 1935-51 (GALLONS)

Year ended June 30	Industrial molasses 1/ used in the production of--			Total usage of industrial mo- lasses in indus- trial alcohol plants and dis- tilleries.
	Ethyl alcohol : 2/	Other products of : industrial alco- hol plants 3/	Distilled spirits 4/	
1935	187,849,299	11,378,631	7,416,832	206,644,762
1936	173,385,873	13,075,949	5,737,208	192,199,030
1937	202,631,056	32,472,450	5,439,660	240,543,166
1938	162,557,843	27,987,171	4,164,633	194,709,647
1939	158,908,347	18,841,142	4,314,729	182,064,218
1940	194,601,378	43,544,144	4,328,001	242,473,523
1941	221,820,392	59,602,277	3,528,327	284,950,996
1942	281,082,026	51,494,017	5,091,586	337,667,629
1943	174,368,827	15,020,815	8,670,107	198,059,749
1944	252,802,147	56,800,846	11,086,788	320,689,781
1945	232,175,077	46,281,165	10,610,766	289,067,008
1946	109,258,237	30,272,711	8,261,498	147,792,446
1947	70,310,252	27,945,575	3,072,209	101,328,036
1948	175,947,462	19,768,298	2,554,650	198,270,410
1949	156,731,884	13,652,330	2,622,888	173,007,102
1950	129,110,565	20,411,727	2,217,661	151,739,953
1951	128,536,707	25,000,000 5/	2,669,334	156,206,041

1/ Includes Invert molasses from 1935-44.

2/ Includes "molasses mixtures" used in making ethyl alcohol.

3/ Chiefly butyl alcohol and acetone.

4/ Chiefly rum and gin.

5/ Estimated by the Sugar Branch.

Source: Annual Report of the Commissioner of Internal Revenue, U. S. Treasury Department and Monthly Reports of the Alcohol Tax Unit, Bureau of Internal Revenue.



MILLION  
WINE  
GALLONS

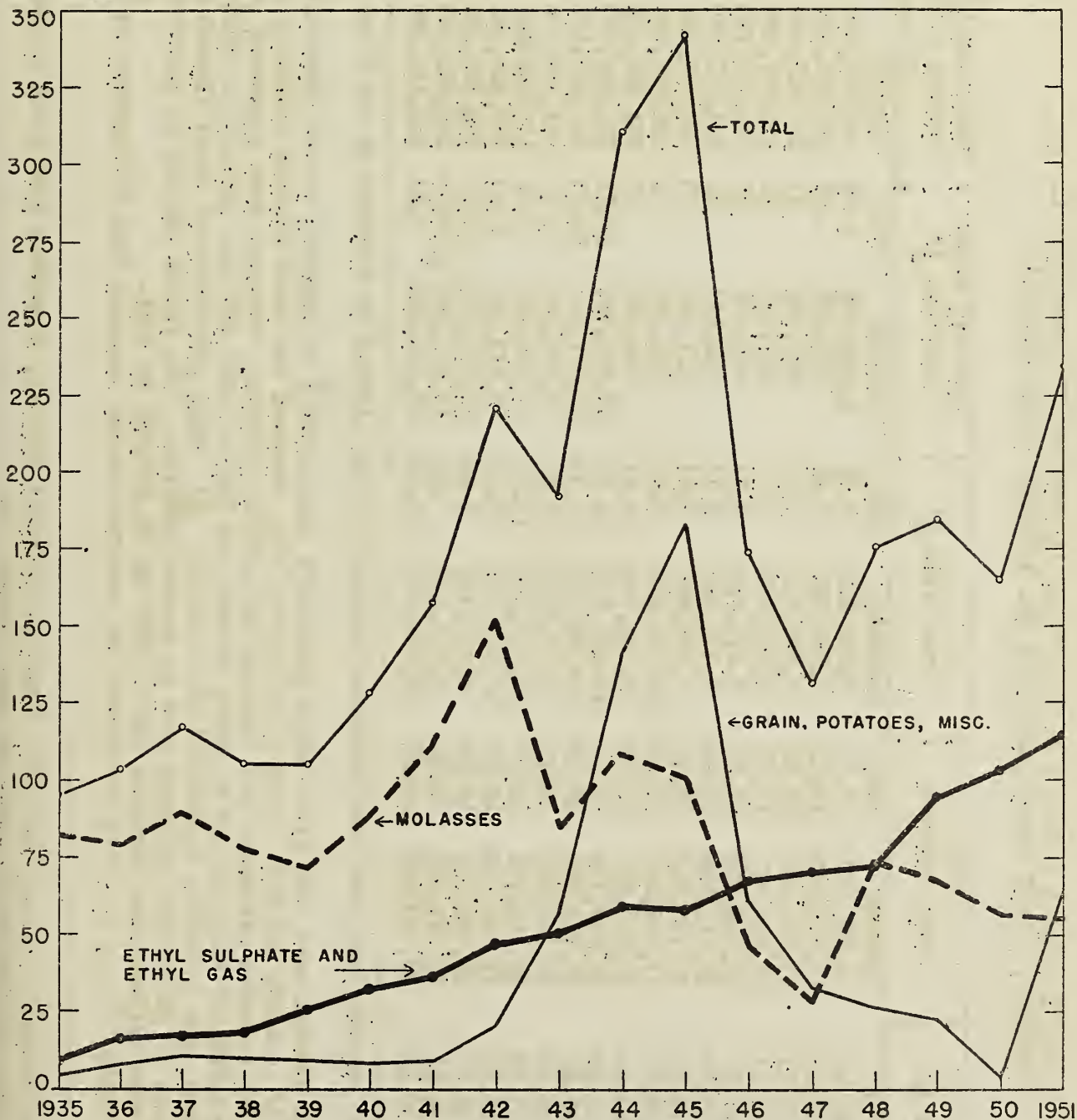


FIGURE 2. QUANTITY OF ETHYL ALCOHOL PRODUCED IN INDUSTRIAL ALCOHOL PLANTS FROM SPECIFIED RAW MATERIALS, FISCAL YEARS, ENDING JUNE 30, 1935-51.

Molasses has become less important as an alcohol raw material, accounting for about 30 percent of total production during the past 6 years as compared to about 70 percent prior to 1943. Ethyl sulfate and ethylene gas have rapidly gained prominence as alcohol raw materials, from about 20 percent prior to 1943 to over 50 percent in recent years.

Table 7  
QUANTITY OF ETHYL ALCOHOL PRODUCED IN INDUSTRIAL ALCOHOL PLANTS FROM SPECIFIED RAW MATERIALS, FISCAL YEARS ENDED JUNE 30, 1935-51. (WINE GALLONS)

Year	From Molasses 1/			From ethyl sulphate :			From Grain 2/			From all other materials 3/			Total net 4/ ethyl alcohol production all sources		
	Quantity	Pct.	Quantity	Quantity	Pct.	Quantity	Quantity	Pct.	Quantity	Quantity	Pct.	Quantity	Quantity	Pct.	Quantity
1935	81,283,647	85.49	9,254,836	2,600,514	2.74	1,937,804	2.04		1,937,804	2.04		95,076,801	100.00		
1936	78,609,660	76.15	16,573,258	7,270,723	7.04	770,696	.72		770,696	.72		103,224,337	100.00		
1937	88,954,368	75.73	17,836,360	9,816,814	8.35	855,265	.73		855,265	.73		117,463,807	100.00		
1938	77,383,398	73.13	18,616,922	9,645,318	9.12	161,657	.16		161,657	.16		105,807,295	100.00		
1939	71,491,731	67.57	25,243,955	8,178,930	7.73	884,094	.84		884,094	.84		105,798,710	100.00		
1940	87,951,759	68.56	32,215,848	7,356,025	5.73	754,137	.59		754,137	.59		128,277,769	100.00		
1941	110,750,952	70.41	36,790,948	9,227,601	5.87	517,564	.33		517,564	.33		157,287,065	100.00		
1942	152,313,584	68.98	47,692,241	20,304,410	9.19	514,294	.23		514,294	.23		220,824,529	100.00		
1943	83,784,007	43.65	50,915,269	56,766,754	29.57	480,804	.25		480,804	.25		191,946,834	100.00		
1944	109,222,541	35.12	59,859,750	108,554,233	34.90	33,378,769	10.73		33,378,769	10.73		311,015,293	100.00		
1945	100,105,881	29.26	58,778,288	148,260,547	43.33	35,007,856	10.23		35,007,856	10.23		342,152,572	100.00		
1946	45,851,801	26.45	67,109,240	55,243,615	31.86	5,156,906	2.98		5,156,906	2.98		173,361,562	100.00		
1947	28,504,588	21.77	70,160,794	20,917,073	15.97	11,364,199	8.68		11,364,199	8.68		130,946,654	100.00		
1948	74,909,698	42.83	73,804,253	18,240,943	10.43	8,173,616	4.53		8,173,616	4.53		175,128,510	100.00		
1949	67,047,454	36.29	86,720,595	6,037,313	3.27	24,939,569	13.50		24,939,569	13.50		184,744,931	100.00		
1950	56,873,033	34.46	89,671,725	1,341,493	.81	17,135,192	5/10.39		17,135,192	5/10.39		165,021,443	100.00		
1951 5/	54,696,000	23.36	98,929,000	58,261,000	24.88	22,290,320	9.51		22,290,320	9.51		234,176,320	100.00		

1/ Additional amounts of alcohol were made from "molasses mixtures"; such alcohol is included in the "From All Other Materials".

2/ Additional amounts of alcohol were made from "grain mixtures"; such alcohol is included in the "From All Other Materials" column 3/ Chiefly sulphite liquors, cellulose pulp, chemical and crude alcohol mixtures, whey, pineapple juice, grain and molasses mixtures, and potatoes and potato products. Potatoes were important when they produced, in 1946 - 1,985,102 wine gallons of ethyl alcohol, in 1947 - 6,769,117 wine gallons, in 1948 - 2,560,402 wine gallons, and in 1949 - 11,331,637 wine gallons. 4/ Gross production of ethyl alcohol minus the number of wine gallons of unfinished products used in re-distillation. This factor was not an important element until 1942. Includes 14,259,167 wine gallons from ethylene gas in 1950 and 16,272,000 in 1951. 5/ Computed by Sugar Branch, P.M.A., by using historical raw material yields computed from "Statistics on Alcohol".

Source: "Statistics on Alcohol", Alcohol Tax Unit, Bureau of Internal Revenue, converted from proof gallons of 100 proof to wine gallons of 190 proof by Sugar Branch, P.M.A.



Table 8  
ETHYL ALCOHOL: FISCAL YEAR WITHDRAWALS AND LOSSES, PRODUCTION, AND STOCKS ON HAND AT END OF FISCAL YEAR, INDUSTRIAL ALCOHOL PLANTS, 1935-51.  
(WINE GALLONS)

W I T H D R A W A L S									
Fiscal Year Ended June 30	Tax-Paid <sup>1/</sup>	Used For Denatur- ation <sup>2/</sup>	For Use Of the United States	Other Uses <sup>3/</sup>	Losses <sup>4/</sup>	Plus Losses <sup>5/</sup>	Production	Stocks June 30	
1935	8,942,614	85,794,610	448,745	1,180,203	292,246	96,658,418	95,076,784	13,290,922	
1936	12,659,225	90,778,272	523,018	1,270,413	230,974	105,461,904	103,224,317	11,210,703	
1937	16,994,550	94,381,233	548,330	1,349,985	277,997	113,552,095	117,463,754	14,981,335	
1938	15,250,844	86,454,306	500,400	1,414,731	276,252	103,896,533	105,807,276	16,866,646	
1939	11,658,403	92,444,532	556,690	1,514,829	261,098	106,435,552	105,798,690	16,242,287	
1940	12,812,790	117,537,719	644,476	1,542,218	261,207	132,798,410	128,277,745	11,472,921	
1941	14,666,589	114,677,481	1,945,267	1,608,053	366,916	163,264,306	157,287,035	5,469,658	
1942	13,122,282	197,242,208	22,799,641	1,612,611	433,818	235,210,560	220,824,487	15,270,663	
1943	2,987,021	214,896,689	54,276,196	1,115,309	1,056,528	274,331,743	191,946,797	112,064,853	
1944	3,251,946	512,336,521	64,419,908	1,231,806	888,696	582,128,877	311,015,234	67,326,076	
1945	14,650,826	511,287,760	58,531,632	1,160,599	725,591	586,356,408	342,152,507	75,599,510	
1946	24,875,343	207,083,385	6,711,245	1,379,022	596,476	240,645,471	173,361,529	58,178,404	
1947	24,812,662	177,910,490	1,547,320	1,374,409	550,769	206,195,650	130,946,630	14,219,068	
1948	20,399,153	178,764,046	149,709	1,810,407	472,517	201,595,832	174,885,311	20,143,869	
1949	21,497,741	170,487,303	339,415	1,420,010	536,197	194,280,666	184,744,897	26,850,196	
1950	21,349,931	169,321,932	305,910	2,230,184	526,316	193,734,273	165,021,443	12,225,645 <sup>7/</sup>	
1951	22,529,573	178,414,394	18,538,477	1,325,004	600,000 <sup>6/</sup>	221,407,448	234,176,320	52,464,964 <sup>7/</sup>	

<sup>1/</sup> For beverage use.

<sup>2/</sup> Represents withdrawals for denaturation 1934 through 1941. For 1942 through 1947 represents all products used for denaturation which were regarded, upon receipt at denaturation plants, as alcohol, whether originally produced as alcohol by industrial alcohol plants or as spirits or unfinished spirits by registered distilleries. This explains why the withdrawal data are so much larger than the production figures during the middle 1940's.

<sup>3/</sup> Represents withdrawals for hospital, scientific, and educational use, for export, and in Puerto Rico for medicinal, beverage, and industrial use.

<sup>4/</sup> Losses in industrial alcohol bonded warehouses, exclusive of losses in denaturing plants.

<sup>5/</sup> See <sup>2/</sup> <sup>6/</sup> Estimated by Sugar Branch, FMA. <sup>7/</sup> Not including stocks of imported alcohol of 10,043,185

Source: "Statistics on Alcohol", Alcohol Tax Unit, Bureau of Internal Revenue, converted from proof gallons of 100 proof to wine gallons of 190 proof by Sugar Branch. FMA



Table 9 PRODUCTION OF DENATURED ALCOHOL INDUSTRIAL DENATURING PLANTS,  
FISCAL YEARS 1935-51 (WINE GALLONS)

Fiscal year ended June 30	Specially denatured	Completely denatured	Total
1935	58,234,395	38,746,679	97,031,074
1936	64,965,485	36,522,358	101,477,843
1937	80,084,281	22,118,378	102,202,659
1938	69,009,024	25,598,717	94,607,741
1939	83,561,077	17,179,433	100,740,510
1940	111,409,797	15,352,033	126,761,830
1941	135,834,261	17,676,172	153,510,433
1942	179,217,153	23,623,181	207,845,334
1943	198,524,631	24,369,738	222,894,419
1944	471,781,325	52,331,761	524,113,586
1945	494,008,004	33,037,533	527,095,537
1946	186,657,673	26,144,437	212,802,110
1947	147,348,371	36,395,715	183,744,086
1948	149,594,037	34,887,789	184,281,826
1949	164,273,211	10,221,492	174,494,703
1950	170,259,583	4,414,058	174,673,641
1951	243,993,613	1,438,564	245,437,177

Source: "Statistics on Alcohol," Alcohol Tax Unit, Bureau of Internal Revenue.

MILLION  
WINE  
GALLONS

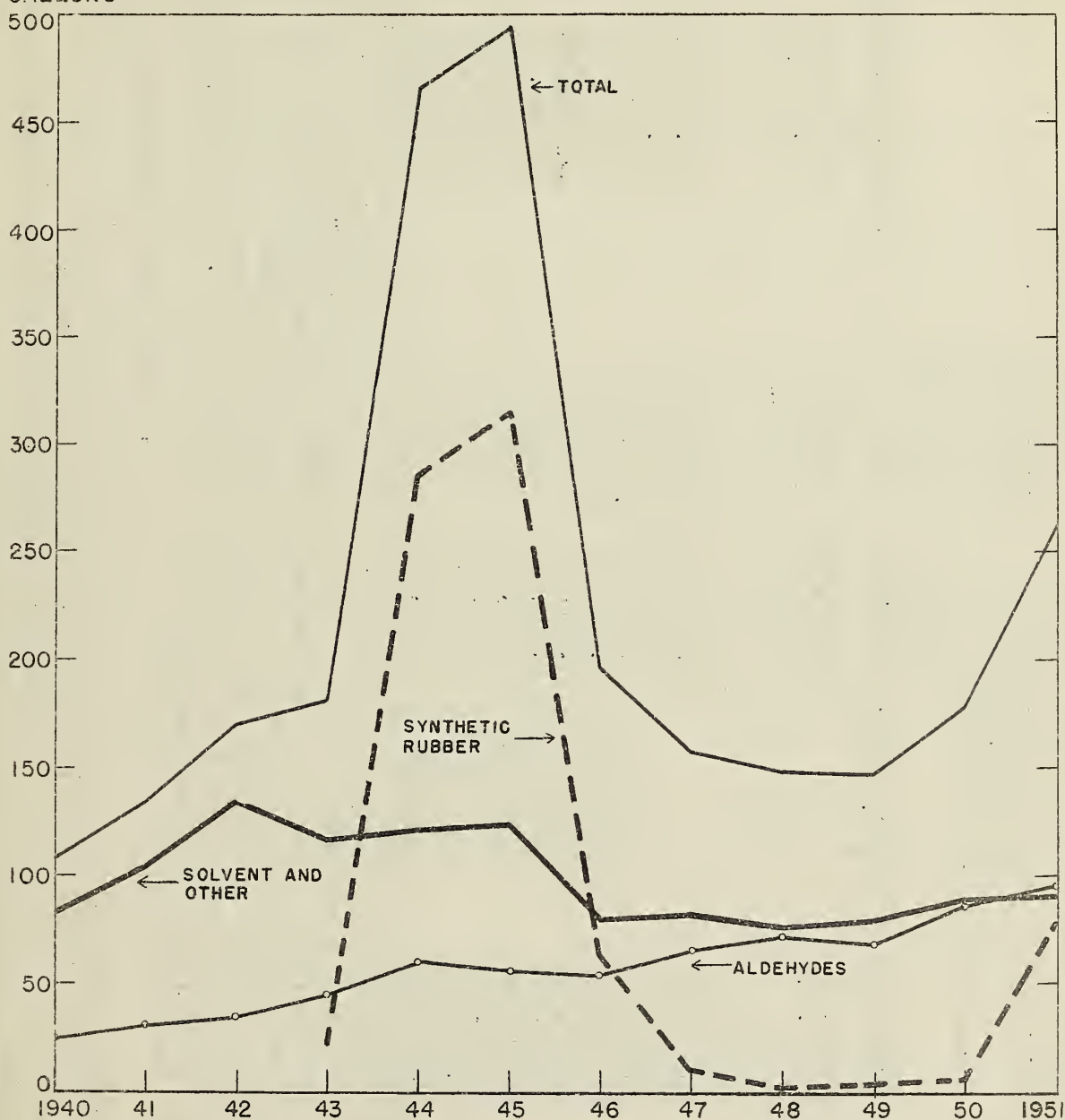


FIGURE 3. USES OF SPECIALLY DENATURED ALCOHOL FROM INDUSTRIAL DENATURING PLANTS, FISCAL YEARS, ENDING JUNE 30, 1940-1951.

Total utilization of specially denatured alcohol, ethyl alcohol to which a denaturant has been added to free it from federal beverage alcohol taxes, has increased only slightly since 1940 although the total demand for industrial alcohol has increased greatly. Use of denatured alcohol in solvents has declined in the face of an ever-increasing demand for solvents because of being displaced by methanol and isopropanol. The significant increase in use of denatured alcohol has been in the production of aldehydes. Aldehydes are converted to special chemicals such as acetic acid and acetic anhydride. The latter is used in the rayon industry. Synthetic rubber has come back into prominence during the past year and will be an important factor in the fiscal year 1951 utilization picture.

Table 10

USES OF SPECIALLY DENATURED ALCOHOL FROM INDUSTRIAL DENATURING PLANTS, FISCAL YEARS 1935-50. (Wine Gallons)

Fiscal year ended	June 30	Used as a Solvent 1/	Used as a raw material converted in chemical manufacturing 2/			Total Utilization
			Aldehydes	Synthetic rubber	Other Chemical Products	
1935 4/			-	-	-	-
1936 5/	63,407,973		16,650,777	-	28,607,288	467,803
1937 5/	79,018,340		27,160,082	-	32,458,847	471,826
1938 4/	-		-	-	-	-
1939 4/	-		-	-	-	-
1940 6/	46,238,101		24,572,238	-	33,209,336	4,344,958
1941	59,841,740		30,338,549	-	40,322,793	4,021,979
1942	86,390,613		34,402,948	-	40,354,169	8,089,670
1943	72,987,392		44,732,885	20,399,165	41,379,684	2,208,836
1944	66,310,074		59,730,282	286,033,171	52,202,416	1,717,107
1945	68,030,703		55,733,932	315,940,167	53,524,181	2,438,024
1946	50,897,999		54,018,723	62,671,789	27,800,474	994,335
1947	53,257,426		65,550,902	9,259,489	28,026,693	995,699
1948	47,016,052		72,932,439	370,818	28,493,876	1,029,532
1949	46,444,874		68,253,434	1,427,787	32,017,886	855,518
1950	51,284,605		87,155,696	3,872,867	35,797,068	975,401

1/ Specially denatured alcohol used as a solvent is utilized principally in connection with the following products or uses: (a) Lacquers, varnishes, and enamels; (b) plastics; (c) solvents and thinners for cellulose, shellac, and resin products; (d) lotions, perfumes, and other toilet preparations, (e) the processing of industrial, food, drug, and other products, for instance the dehydration of nitrocellulose, (f) pharmaceutical products, such as rubbing alcohol, and (g) cleaning, preserving, and flavoring preparations.

2/ When used as a raw material, the denatured alcohol reacts in the formation of other chemicals. Principal products using denatured alcohol as a raw material are: aldehydes, synthetic rubber, vinegar, ethyl acetate, ethyl chloride, esters, ethers, ethylene dibromide, etc.

3/ This category includes: Brake fluids, cutting oils, other fluid uses, motor fuels and fuel uses, and experimental uses.

4/ No data available. No reports issued.

5/ Total quantities used, including large quantities previously recovered for re-use.

6/ Beginning with 1940, the figures relate only to new denatured alcohol, and exclude previously recovered alcohol which was re-used.

Source: Alcohol Tax Unit, Bureau of Internal Revenue, Treasury Department



Table 11

ETHYL ALCOHOL, 190 PROOF, NEW YORK AVERAGE MONTHLY WHOLESALER PRICE,  
TAX FREE, TANK CAR LOTS, JANUARY 1935-AUGUST 1951.  
(CENTS PER GALLON)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1935	28.5	28.5	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
1936	29.2	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	25.5
1937	25.0	25.0	25.0	25.0	25.0	25.5	26.0	26.0	26.0	26.0	26.0	26.0
1938	26.0	26.0	24.2	24.0	24.0	24.0	23.5	22.0	22.0	22.8	23.0	22.5
1939	20.8	20.0	19.6	18.5	18.5	18.5	18.5	18.5	18.5	20.1	20.5	20.5
1940	20.5	20.5	20.5	20.5	20.5	20.5	20.5	22.5	22.5	23.5	23.5	24.5
1941	24.5	24.5	24.5	25.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
1942	52.0 <u>1/</u>	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
1943	52.0	52.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
1944	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
1945	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.5	52.7	55.5
1946	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	76.9 <u>1/</u>	84.0
1947	84.0	84.0	84.0	98.0	98.0	98.0	98.0	87.0	87.0	90.6	96.0	94.9 <u>2/</u>
1948	94.5	94.5	93.0	91.0	88.0	86.5	85.0	77.5	75.0	75.0	62.5	46.2
1949	38.5	24.5	21.0	21.0	21.0	21.0	29.0	29.0	29.0	29.0	29.0	29.0
1950	29.0	29.0	32.0	35.0	35.0	37.0	39.0	39.0	75.0	85.0	90.0	90.0
1951	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0			

Source: Oil, Paint, and Drug Reporter. 1/ Beginning and ending of price controls. 2/ In the second week of December the price quotation changed from a price "at works" to a price "delivered east of the Mississippi River."

Table 12

INSHIPMENTS OF INDUSTRIAL MOLASSES TO THE U.S. MAINLAND EXPRESSED  
AS A PERCENT OF TOTAL ANNUAL PRODUCTION IN CUBA, PUERTO RICO  
AND HAWAII, CALENDAR YEARS 1935-50

Year	Inshipments to the United States Mainland			
	Cuba	Puerto Rico	Hawaii	All Areas
1935	96.9	19.2	67.0	88.5
1936	75.7	62.2	45.7	69.9
1937	66.3	67.9	68.4	66.7
1938	56.0	41.4	58.3	54.3
1939	64.0	61.0	64.8	63.8
1940	78.8	59.4	70.2	75.7
1941	79.3	45.9	92.1	78.0
1942	58.4	23.5	78.4	56.4
1943	104.1	24.9	98.8	89.1
1944	55.0	62.5	82.6	57.8
1945	58.3	40.3	82.5	59.4
1946	24.8	45.0	89.2	34.9
1947	35.2	62.9	76.8	43.8
1948	41.9	81.8	102.2	53.1
1949	55.5	73.5	92.3	62.5
1950	71.2	63.1	99.3	73.3

Source: Table